

WHAT IS CLAIMED IS:

1. An image processing method, comprising:  
an extracting process of extracting a  
characteristic amount of an input image;  
5 a generating process of generating a high  
frequency component of the input image;  
a gradation converting process of converting a  
gradation of the input image on the basis of the  
characteristic amount; and  
10 an adding process of adding the high frequency  
component to the input image whose gradation has been  
converted.

2. An image processing method according to claim  
15 1, wherein said adding process includes a correcting  
process of correcting the high frequency component.

3. An image processing method according to claim  
2, wherein said correcting process is used for  
20 correcting the high frequency component according to a  
pixel value of the input image.

4. An image processing method according to claim  
2, wherein said adding process is used for correcting  
25 the high frequency component according to a  
characteristic of said gradation conversion.

5. An image processing method according to claim 1, wherein said generating process includes a smoothing process for smoothing the input image and a subtracting process for subtracting the smoothed image from the input image.

6. An image processing method according to claim 5, wherein a morphological filter is used for said smoothing process.

7. An image processing method according to claim 1, further comprising:

a converting process of converting the image to which said high frequency component has been added according to the characteristic amount.

8. An image processing method according to claim 1, wherein the input image is a medical image.

9. An image processing method according to claim 1, wherein the input image is an image within an irradiation field included in a photographed image.

10. An image processing method according to claim 1, further comprising:

an adjusting process of adjusting gradation conversion conditions used for said gradation

converting process on the basis of an instruction of a user.

11. An image processing method, comprising:  
5 an extracting process of extracting a  
characteristic amount of a medical input image; and  
an output process of outputting the medical image  
for which a first or a second dynamic range conversion  
has been performed, having the first dynamic range  
10 converting process of converting a dynamic range using  
a first algorithm on the basis of the characteristic  
amount and the second dynamic range converting process  
of converting a dynamic range using a second algorithm  
on the basis of the characteristic amount.

12. An image processing method according to  
claim 11, further comprising:  
a selecting process of selecting the first or  
second dynamic range converting process according to a  
20 region represented by the medical input image.

13. An image processing method according to  
claim 11, further comprising:  
a selecting process of selecting the first or  
25 second dynamic range converting process according to a  
manual instruction of a user.

14. An image processing method according to claim 11, wherein the first dynamic range converting process includes a generating process of generating a high frequency component of the medical input image, a gradation converting process of converting a gradation of the medical image on the basis of the characteristic amount, and an adding process of adding the high frequency component to the gradation-converted medical image.

10 15. An image processing apparatus, comprising:  
extracting means for extracting a characteristic amount of an input image;

15 generating means for generating a high frequency component of the input image;

gradation converting means for converting a gradation of the input image on the basis of the characteristic amount; and

20 adding means for adding the high frequency component to the input image whose gradation has been converted.

16. An image processing apparatus, comprising:  
extracting means for extracting a characteristic amount of a medical input image; and  
25 output means for outputting the medical image for which a first or a second dynamic range conversion has

been performed, having the first dynamic range  
converting means for converting a dynamic range using a  
first algorithm on the basis of the characteristic  
amount and second dynamic range converting means for  
5 converting a dynamic range using a second algorithm on  
the basis of the characteristic amount.

17. A recording medium which stores a program,  
said program comprising the steps of:

- 10 extracting a characteristic amount of an input  
image;  
generating a high frequency component of the input  
image;  
15 converting a gradation of the input image on the  
basis of the characteristic amount; and  
adding the high frequency component to the input  
image whose gradation has been converted.

18. A recording medium which stores a program,  
20 said program comprising the steps of:

- extracting a characteristic amount of a medical  
input image; and  
outputting the medical image for which a first or  
a second dynamic range conversion has been performed,  
25 having first dynamic range converting means for  
converting a dynamic range using a first algorithm on  
the basis of the characteristic amount and second

~~range, converging in a second characteristic amount~~

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